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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,394	09/01/2004	Heru Prasanta Wijaya	53225/DBP/R130	1425

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EXAMINER	
WU, IVES J	
ART UNIT	PAPER NUMBER
1724	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/506,394	WIJAYA, HERU PRASANTA	
	Examiner	Art Unit	
	Ives Wu	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 9/1/04.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☒ Claim(s) 8,9 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 9/1/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

(1). **Claim 8** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Line 5 of instant claim 8, the format of the groups is improper Markush terminology when it recites: using hook, clip and thread-locking systems.

(2). **Claim 9** is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 9 which depends on two independent claims 1 and 6 at same time. See MPEP § 608.01(n). Accordingly, the claim 9 has not been further treated on the merits.

Claim Rejections - 35 USC § 102

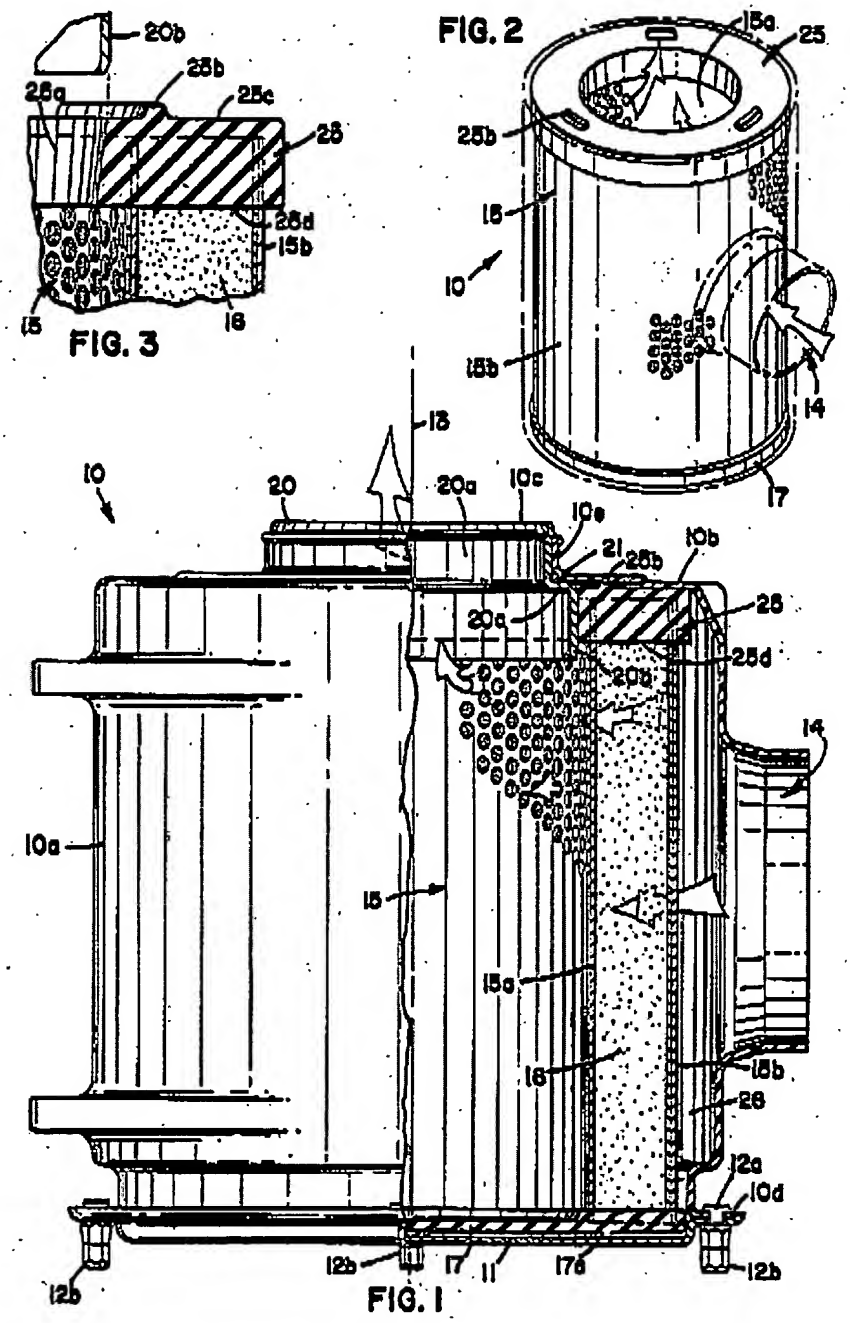
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(3). **Claims 6 - 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Engel et al (US004720292).

As to parts of a filtering medium and inner mesh equipped with lower rubber and upper rubber which functions as a binder as well as stabilizer for the filtering medium and its consistent shape in knocked-down air filter for internal combustion engine in **independent claim 6**, Engel et al (US004720292) disclose a cylindrical, pleated paper filter elements used primarily with over-the-road trucks and agricultural tractors (**internal combustion engine**) (Col. 1, line 7-10). As shown in Figure 1, filter element 15 has an inner liner 15a (**inner mesh**) and outer liner 15b (**perforated plate**), both being cylindrical, and both being constructed from perforated metal. A cylindrical pleated paper filter 16 (**filer medium**) is mounted between the inner liner 15a and outer liner 15b. Filter element 15 has a closed end 17 (**detachable lower housing**) in the form of a circular cap of a urethane foam material (**lower rubber**) molded thereon. Cap 17 is molded over and holds together the ends of liners 15a, 15b and filter 16 (**binder as well as stabilizer**)

(Col. 2, line 60-Col. 3, line 2). End cap 25 is preferably made from an elastomer (**upper rubber**) such as a urethane foam material functioning as a seal or gasket material (**binder as well as stabilizer**). An air filter or cleaner having a housing 10 with generally cylindrical outer wall 10a, a first generally closed end 10b (upper housing) comprising a generally circular end wall having an axial outlet opening 10c, and generally open 2nd end having a circular outwardly extending flange 10d to which is connected a removable cover 11 by means of a plurality of threaded bolts 12a and plastic nuts 12b (**by means of locker**) (Col. 2, line 48-56).



As to knocked-down air filter in **independent claim 6**, the disclosure of Engel et al meet the requirements of current claim in terms of the parts and design, it is reasonable to presume that the cylindrical air filter of prior arts would be a knocked-down filter as well. The burden is shifted to applicant to establish that the knocked down air filter of present claim is not the same as or obvious as that set forth by the references.

As to limitation of **claim 7**, Engel et al disclose a cylindrical pleated paper filter 16 is mounted between inner 15a and outer liner 15b. A circular cap 17 of a urethane foam material is molded over and holds together the ends of inner, outer liners and filter (Col. 2, line 63- Col. 3, line 1). The open end of filter element 15, adjacent closed end 10b of the housing 10, is provided with a ring-like end cap 25 which is molded over the ends of liners 15a, 15b and pleated paper filter 16. End cap 25 is preferably made from an elastomer such as urethane foam material capable of functioning as a seal or gasket material (Col. 3, line 32-39).

As to limitation of **claim 8**, Engel et al disclose threaded bolt joints 12b in figure 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(4). **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Engel et al (US004720292) in view of Oke (US006280491B1).

As to lower housing, upper housing engaged by a reinforcing means in the form of spiral in **claim 9**, Engel et al **do not teach** the reinforcing means in the form of spiral.

However, Oke (US006280491B1) **teaches** the cartridge filter with a coil spring positioned within the cartridge filter as shown in Figure 10 and 10(a).

The advantage of coil spring is due to the fact that the coil engage between the pleats there is little or no wear on the pleats (Col. 4, line 44-45). Further evidenced by Butler

(US006102978A) that the preformed metal coil has end portions to retain the end caps in place on the filter media (Abstract, line 3-7).

Therefore, it would have been obvious at time of the invention to install the coil spring disclosed by Oke in the cylindrical filter of Engel et al in order to obtain the above-mentioned advantage.

(5). **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Engel et al (US004720292) in view of Heilmann et al (US20010020512A1).

As to limitation of **claim 10**, Engel et al **do not teach** the pleated filter medium to be reinforced by a plastic reinforcing substance wound as a ring around the filtering medium as claimed.

However, Heilmann et al (US20010020512A1) **teach** a pleated filter element, at least one adhesive track or reinforcing member is arranged (Abstract). In one preferred embodiment, these reinforcing members are formed by applying a continuous bead of a hot melt adhesive across the filter element transversely to the direction of the pleats ([0019], line 5-8).

The advantage of applying the hot melt adhesives in such a way is for reinforcement as the pleated filter is bended to a curved configuration (Abstract).

Therefore, it would have been obvious at time of the invention to apply a continuous hot melt adhesives transversely to the pleated filter disclosed by Heilmann et al for the pleated paper filter of Engel et al in order to obtain the above-mentioned advantage.

(6). **Claims 1-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Coulonvaux (US20010000845A1) in view of Oke (US006280491B1).

As to parts of a filtering medium and inner mesh engaged by lower rubber and upper rubber acting as a binder so that filtering medium and inner mesh engaged integrally in knocked-down air filter for internal combustion engine in **independent claim 1,** Coulonvaux (US20010000845A1) discloses a cylindrical air filter element including an inner liner (**inner mesh**), an outer liner (**perforated plate**), filter media (**filter medium**) captured between a closed end (**detachable lower housing**) and an open end (**upper housing**) as shown in Figure 2 (Abstract, line 6-8). Closed end 44 is in the form of a circular cap of urethane foam material (**lower rubber**) molded thereon and having a relatively soft, rubber-like consistency. Closed end

44 is molded over and holds together the ends of liners 38 and 40 and filter element 42 ([0013], line 9-13). A ring-like end cap 46 is molded over the ends of liners 38, 36 and pleated filter element 42. End cap 46 is preferably made from an elastomeric material (**upper rubber**) such as urethane foam material having a relatively soft, rubber-like consistency so that it is capable of functioning as a seal or gasket material (**binder**) ([0014, line 1-7).

As to the reinforcing pile in knocked-down filter in **independent claim 1**,Coulonvaux **does not teach** a reinforcing pile.

However, Oke (US006280491B1) **teaches** the cartridge filter with a coil spring positioned within the cartridge filter as shown in Figure 10 and 10(a).

The advantage of coil spring is due to the fact that the coil engage between the pleats there is little or no wear on the pleats (Col. 4, line 44-45). Further evidenced by Butler (US006102978A) that the preformed metal coil has end portions to retain the end caps in place on the filter media (Abstract, line 3-7).

Therefore, it would have been obvious at time of the invention to install the coil spring disclosed by Oke in the cylindrical filter of Coulonvaux in order to obtain the above-mentioned advantage.

As to detachable lower housing, perforated plate and reinforcing pile, upper housing being able to be assembled in **independent claim 1**, Coulonvaux discloses the filter element to be attached to the end cap by inserting the outlet portion of the end cap into the opening defined in the end cap of the filter element. A cover is removable mounted to enclose the 2nd end of the tubular housing ([0005]). The reinforcing pile would be able to be assembled together when the teaching of Oke is combined.

As to parts of filter medium and inner mesh being combined with lower housing, perforated plate, reinforcing pile and upper housing to be formed into a air filter by means of locker in **independent claim 1**, Coulonvaux discloses cover 50 having a plurality of spring-loaded clamps 59 **(locker)** which engage flange portion 58 to secure cover 50 thereto ([0015], line 6-7).

As to knocked-down air filter in internal combustion engine **independent claim 1**, the disclosure of Coulonvaux, Oke meet the requirements of current claim in terms of the parts and design, it is reasonable to presume that the cylindrical air filter of prior arts would be a knocked-

down filter in combustion engineer as well. The burden is shifted to applicant to establish that the knocked down air filter of present claim is not the same as or obvious as that set forth by the references.

As to limitation of **claim 2**, Coulonvaux does not disclose the use of thread-locking system. However, it would have been obvious at time of invention to replace the clamps with hook-locking because such limitations are merely a matter of design choice to one of ordinary skill in the art as further evidenced by Behrendt et al (US005137557A), it recites the use of hook closure for the lock in the cylindrical air filter as shown in Figure 3.

As to the clip-locking system in **claim 3**, Coulonvaux discloses the spring-loaded clamps ([0015, line 6-7).

As to limitation of **claim 4**, Coulonvaux does not disclose the use of thread-locking system. However, it would have been obvious at time of invention to replace the clamps with thread-locking because such limitations are merely a matter of design choice to one of ordinary skill in the art as further evidenced by Engel et al (US004720292), it recites the use of thread-bolt for the lock in the cylindrical air filter.

As to limitation of **claim 5**, Oke discloses the coil spring in cartridge filter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu
Art Unit: 1724
Date: December 16, 2006

DUANE SMITH
PRIMARY EXAMINER
1-4-07